TED01 – (Enviro Part 02) Acid Deposition

Name _____

1. E.2.1 State what is meant by the term acid deposition and outline its origins. (1) *Acid deposition refers to the process by which acidic particles, gases and precipitation leave the atmosphere. Both wet deposition (acid rain, fog and snow) and dry deposition (acidic gases and particles) will be assessed. Rain is naturally acidic because of dissolved CO2 but acid rain has a pH of less than 5.6. It is caused by oxides of sulfur and oxides of nitrogen. The equations for the burning of sulfur and nitrogen, and for the formation of H2SO3, H2SO4, HNO2 and HNO3, will be assessed.*
    a. What is acid deposition?

    b. How is carbonic acid a natural contributor to acid rain? Provide equations to support your response:

    c. There are four common routes for Wet Acid Deposition, complete the table:

Acid Formation	Equation	Explanation
Sulfurous Acid		
Sulfuric Acid		
Sulfuric Acid #2		
Nitrous Acid		
Nitric Acid		

    i. Why is wet acid deposition such a problem in high-altitude climates?

    d. What is Dry deposition?

2. E.2.2 Discuss the environmental effects of acid deposition and possible methods to counteract them. (3)
    a. What are the five environmental effects of acid rain? Explain each below:

Environmental Effect on	Detailed information regarding effect	Appropriate Equations

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b. There are two generic methods to counter acid deposition, describe each method below:

	Explanation of Process
Limit the Production	
Neutralize the effects	

c. Explain what type of compounds Limestone and calcium hydroxide are and which one, if added in large amounts upstream on a river, would limit the effects of acid deposition while also limiting the effects of adding a new chemical to the environment?